

6 October 2017

Response to request for technical corrections and title justification “Opportunities and limitations related to the application of plant-derived lipid molecular proxies in soil science” – Boris Jansen & Guido Wiesenberg

Title

As we also described in our rebuttal to the first round of review, we do not agree with the previous reviewer that our paper exclusively focusses on linear alkyl compounds. We explicitly included cyclic biomarkers such as isoprenoids. However, an important observation of our review is that most of the research related to molecular proxies within soil science has focused on alkyl compounds so far. While we explicitly included cyclic compounds, such as the isoprenoids, in our review, there simply are not as many papers out on those as there are on linear compounds (see also Table 1).

In our previous rebuttal we wrote the following:

“A clear and motivated delineation of the compound classes considered in our review is given in the introduction (p. 4, l.29 – p. 6, l. 21). These explicitly include the cyclic biomarkers mentioned. It is true that the alkyl compounds receive more attention in the review than some of the other classes of components. This is borne out of necessity, as the majority of research concerning biomarkers in soils focusses on alkyl compounds (see also our reply to the last comment of Referee #1). We explicitly acknowledged the unequal distribution of research efforts with respect to different compound classes on multiple occasions, and urged for future research to help overcome this bias (e.g. p.14, l.24-26; p. 27, l.26-32). With respect to the potential mechanisms of disturbance to consider, clearly a choice had to be made to keep the manuscript within reasonable page limits. We therefore made a motivated choice to focus on three main processes and underpinned this with multiple literature references (p. 5, l. 1-16).

Because we did explicitly address cyclic biomarkers, we feel it would be imprudent to narrow the title such that this class of components is excluded. Then the title would no longer cover the contents and would erroneously suggest that cyclic biomarkers are not important or were not considered.

Technical corrections

P7 l20-26: request is to write plant names in italics. However, the names presented here are family names and the convention is that family names are not in italics (genus and species are).

P8 l1: request is to change ‘fatty acid’ to ‘n-fatty acid’. However, Mongrand et al. examined not only the saturated, but also the unsaturated fatty acids. Therefore, the prefix ‘n’ does not apply.

P9 l4: changed as requested

P10 l24-25: request is to change the description of the fatty acids to another convention. However, the convention we used to our knowledge and experience is the most common and established way to annotate such compounds within the field of soil science.

P11 l9: changed as requested

P13 l2: changed as requested

P15 l14-20: changed as requested

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P16 l31: changed as requested

P17 l1: changed as requested

P18 l19: changed as requested

P18 l27: changed as requested

P19 l5: changed as requested

P20 l14: changed as requested

P22 l27-30: changed as requested

P23 l16-26: changed as requested

P24 l8-14: changed as requested

P27 l21-22: changed as requested

P28 l21: changed as requested

P29: change hyphen to en-dash in reference page numbers: changed as requested.

P30 l1: changed as requested

P30 l20: changed as requested

P31 l9: changed as requested

P33 l9: changed as requested

P34 l21: changed as requested

P38 l15: genus changed to italics

P39 l9-16: family names should not be in italics

P39 l19: changed as requested

P41 l14: changed as requested

P42 l7: family names should not be in italics

P45 l2: family names should not be in italics

P45 l6: changed as requested

P49: changes to table made as requested